

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

**BOARD OF PATENT APPEALS AND INTERFERENCES**

Applicant: Darren KIM, et al.

Serial No.: 09/894,568

Filed: June 27, 2001

For: *Notebook Computer with Detachable Infrared Multi-Mode Input Device*

Parent case: Continuation of U.S. Pat. App. No. 09/145,817,  
filed September 2, 1998, now U.S. Pat. No. 6,424,335

Group Art Unit: 2629

Examiner: Kent CHANG

Confirmation No.: 5901

**APPLICANT'S SECOND AMENDED APPEAL BRIEF UNDER 37 C.F.R. § 41.37**

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## **I. REAL PARTY IN INTEREST**

The present application is owned by Fujitsu Limited, a Japanese Corporation.

## **II. RELATED APPEALS AND INTERFERENCES**

None.

## **III. STATUS OF CLAIMS**

Claims 1 – 8, 10 – 17, 20 – 25, 28 – 62 and 65 stand rejected.

Claims 9, 18, 19, 26, 27, 63 and 64 have been canceled.

Appeal is taken as to all of the rejected claims.

## **IV. STATUS OF AMENDMENTS**

No amendment has been filed subsequent to the rejection from which this appeal is taken.

## **V. SUMMARY OF CLAIMED SUBJECT MATTER<sup>1</sup>**

Generally, the present invention is related to: (1) computers, primarily portable or notebook computers, (2) various types of remote input devices, primarily pointing devices, which may be used with such computers, and (3) computer systems comprising combinations of such computers and such input devices. Remote input devices for use with portable computers can be used in a variety of settings. One important business use is in connection with the delivery of computer-based presentations, so that the presenters have the freedom to move about while they control such computers. The present invention also is directed to specific features and

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<sup>1</sup> While the claims are set out below in groups involving common themes for purposes of this introductory discussion, the groupings are not intended to suggest that the claims should be similarly grouped together for purposes of determining their patentability, and it is noted that the claim groupings do not correspond to the groupings used in the various rejections. Moreover, the summary characterizations of the claimed inventions set forth below are not intended as rigorous interpretations of any of the claims, and the failure to mention certain claimed features in this introductory discussion is not intended to suggest that such features are unimportant for purposes of patentability. Likewise, the failure to discuss certain dependent claims in this introductory discussion is not intended to mean that such claims are not distinctly patentable.

expedients to make the remote devices and computer systems especially useful in presentation settings.

Claims 1 – 8 and Claims 34 – 41 – These claims are directed to wireless sensors associated with portable computers for wide angle reception of signals from remote input devices. Wide angle reception is particularly important when the remote is used at a distance from the computer and is moved about, as in presentation.

Independent claim 1 is directed to a notebook computer having an infrared sensor on the display frame in order to achieve wide angle detection of an infrared signal (*see* p. 5, l. 26- p. 6, l. 12; p. 10, ll. 19-26; p. 13, l. 28-p. 14, l. 6; p. 17, l. 9-p. 18, l. 6; Fig. 1, ref. nos. 20, 30, 40 and 50; and Figs. 7A-7C, ref. no. 245). Independent claim 34 is similar to claim 1, but more broadly refers to a wireless receiver (*id.*, *see also* p. 6, ll. 12-18; p. 10, l. 26-p. 11, l. 20; p. 13, ll. 17-27; and Fig. 1, ref. nos. 70 and 100). Independent claim 4 is directed to a notebook computer having at least two infrared sensors and a signal combining element so that wide angle reception from the remote input device is achieved (*see* p. 5, l. 26-p. 6, l. 12; p. 10, ll. 19-26; p. 17, l. 26-p. 18, l. 6; p. 19, l. 29-p. 20, l. 4; Fig. 1, ref. nos. 20, 30, 40 and 50; Fig. 5, ref. no. 220; Fig. 8, ref. no. 265; and Fig. 13, ref. no. 285). Independent claim 38 is a broader version of claim 4 (*id.*, *see also* p. 10, l. 26-p. 11, l. 20; p. 13, ll. 17-27; and Fig. 1, ref. nos. 70 and 100).

Various dependent claims specify the number and positioning of the sensors.

Claims 10 – 15 and 42 - 46 – These claims are generally directed to power conserving pointing devices for computers.

Independent claim 10 is directed to a pointing device using a ball and optical encoders which has a control circuit capable of controlling the power to the photo-interrupters of the optical controller (*see* p. 12, l. 6-p. 13, l. 16; p. 22, l. 20-p. 24, l. 26; Fig. 2A, ref. no. 100; Fig. 2B, ref. no. 140; Fig. 14, ref. no. 400; and Fig. 15, ref. nos. 460, 465, 470 and 475). The control circuit operates the optical encoders in a periodic pulsed mode to conserve power when the ball when the ball is at rest. Dependent claims 12 and 43 specify that the device has a range switch corresponding to two transmitter power settings. Dependent claim 14 and 45 specify that the input device comprises a user settable identification code. Claims 15 and 46 specify that the input device comprises a laser pointer.

Claims 16, 17, 20 – 23 and 47 – 52 – These claims are generally directed to remote pointing devices capable of functioning in two device modes. Having both a mouse mode for normal operation, and a second, handheld pointing device mode allows the user to operate a pointing device in a handheld position while giving a presentation, *i.e.*, it avoids the need to place the remote on a surface for operation. Another claimed feature that is useful for presenters is the inclusion of a laser pointer.

Independent claim 16 is directed to an ergonomic infrared pointing device which can be used either as a mouse in a first position or as a second type of pointing device in a second position (*see* p. 12, l. 16-p. 13, l. 27; p. 22, l. 20-p. 24, l. 26; p. 26, l. 13-p. 27, l. 6; Figs. 2A-2D, ref. nos. 100, 110, 120, 130, 145, 175, 180 and 185; and Fig. 15, ref. nos. 460, 465, 470 and 475). Independent claim 47 is similar to claim 16, but is broader in certain respects (*id.*). The dependent claims specify the type of second pointing device, and that the device also comprises a laser pointer.

Claims 24, 25, 28 and 53 – 55 – These claims are generally directed to a multi-input device which functions both as a pointing device and as a second type of non-pointing computer input device. Again, having a second, non-pointing device, such as a microphone, is an enhanced feature that is useful when giving presentations.

Independent claim 24 is directed to a device that uses optical-encoder mouse which generates digital positional information and a data input device which generates non-pointer related information (*see* p. 12, l. 16-p. 13, l. 27; p. 22, l. 20-p. 24, l. 26; p. 29, l. 1-p. 30, l. 29; Figs. 2A-2D, ref. nos. 100, 110, 120, 130, 140, 145, 175, 180, 185 and 190; Fig. 14, ref. no. 400; Fig. 15, ref. nos. 460, 465, 470 and 475; Fig. 28, ref. no. 710; Fig. 29, ref. no. 712; Fig. 31, ref. no. 716; and Fig. 32, ref. no. 718). A mode control switch selects between the two modes of operation and the data are transmitted via an infrared transmitter. Independent claim 53 is similar to claim 24 but is not limited to a mouse-type pointing device, nor is it limited to an infrared transmitter (*id.*, *see also* p. 28, ll. 19-30; Fig. 25, ref. no. 702; Fig. 26, ref. no. 704; and Fig. 27, ref. no. 706). The dependent claims specify the type of non-pointing input device.

Claims 29 – 33 and claims 56 – 60 – These claims are generally directed to a computer system having multiple pointing devices, one of the devices being a remote that can nest in the computer base.

Independent claim 29 is directed to a notebook computer system having an infrared pointing device that removably fits within the computer base. The computer base has a second pointing device. The computer further comprises a signal arbitration circuit to determine how the inputs from the two pointing devices are used to control the pointer position (*see* p. 5, l. 26-p. 6, l. 18; p. 10, l. 19-p. 11, l. 4; p. 12, l. 6-p. 13, l. 16; p. 17, ll. 9-25; p. 27, l. 7-p. 28, l. 18; Fig. 1, ref. nos. 20, 30, 50, 70 and 100; Fig. 2B, ref. no. 140; Fig. 2D, ref. no. 180; Fig. 7A, ref. no. 245; and Fig. 23A-23D, ref. nos. 600 and 650). Claim 56 is similar to claim 29 but is not limited to infrared devices (*id.*). Dependent claims 30 and 57 specify that the computer also has a port for a third pointing device, and that the signal arbitration circuit acts on inputs from all three pointing devices. Dependent claims 31 – 33 and 58 – 60 specify features of the signal arbitration circuit.

Claims 61, 62 and 65 – These claims are directed to a portable computer system having a remote pointing device that nests in the base of the portable computer.

Independent claim 61 is directed to a portable computer system having a remote which functions in two pointing device modes, a receiver, and a recess for receiving said remote pointing device (*see* p. 10, l. 19-p. 11, l. 20; p. 12, l. 16-p. 13, l. 27; p. 17, ll. 9-25; Fig. 1, ref. nos. 20, 50, 55 and 70; Figs. 2A-2D, ref. nos. 100, 110, 140, 145 and 180; and Fig. 7A, ref. no. 245). Independent claim 65 is directed to a portable computer system with a remote pointing device and a second input device mounted on the computer base, where the base has a recess positioned in front of the second input device for receiving the remote pointing device (*id.*).

There are no “means-plus-function” or “step-plus-function” claim elements under 35 U.S.C. § 112, sixth paragraph, in any of the claims. While dependent claim 54 refers to a “sound input means,” it is submitted that because specific structure is recited that is not defined in terms of its function, this is not a “means plus function” element and no discussion under 37 C.F.R. § 41.37(c)(1)(v) is required. In any event, the patentability of dependent claim 54 is not separately argued.

## **VI. GROUNDS OF REJECTION TO BE REVIEWED ON APPEAL**

The list of rejections is presented in the order they appear in non-final Office Action dated November 16, 2004, from which the present appeal is taken. Because the present application has been rejected three times, appeal from the November 16, 2004, non-final Office Action is appropriate under 35 U.S.C. § 134 and 37 C.F.R. § 41.31.

### ***A. Rejections under 35 U.S.C. § 102***

Rejection 1: **Claims 53 and 54** were rejected as being anticipated by **Yeom** et al., U.S. Pat. No. 5,943,625.

### ***B. Rejections under 35 U.S.C. § 103***

Rejection 2: **Claims 1 – 8 and 34 – 41** were rejected as obvious over **Blankenship** et al. (U.S. Pat. No. 5,726,684) in view of **Fujioka** (U.S. Pat. No. 6,674,424). *It is noted that Fujioka has a filing date (October 30, 2000) that is more than two years AFTER the priority date of the present application and, therefore, is NOT prior art.*

Rejection 3: **Claims 10 – 15 and 42 – 46** were rejected as obvious over **Junod** et al. (U.S. Pat. No. 5,854,621) in view of **Donovan** (U.S. Pat. No. 5,252,968).

Rejection 4: **Claims 16, 17 and 20** were rejected as obvious over **Blankenship** et al. in view of **Cheng** (U.S. Pat. No. 5,457,479) and **Herng-Chuen** (U.S. Pat. No. 5,914,703).

Rejection 5: **Claims 21 – 23** were rejected as obvious over **Blankenship** et al. in view of **Cheng, Herng-Chuen and Wang**.

Rejection 6: **Claims 47, 48, 61 and 65** were rejected as obvious over **Herng-Chuen** in view of **Cheng**.

Rejection 7: **Claims 49 – 52** were rejected as obvious over **Herng-Chuen** in view of **Cheng and Wang**.

Rejection 8: **Claim 62** was rejected as obvious over **Herng-Chuen** in view of **Cheng** and **Kim et al.** (U.S. Pat. No. 5,952,996).

Rejection 9: **Claims 24 and 25** were rejected as obvious over **Yeom et al.** in view of **Blankenship et al.**

Rejection 10: **Claims 28 and 55** were rejected as obvious over **Yeom et al.** in view of **Blankenship et al.** or **Klein et al.** (U.S. Pat. No. 6,163,326).

Rejection 11: **Claims 29 – 33 and 56 – 60** were rejected as obvious over **Oka** (U.S. Pat. No. 5,049,863) in view of **Long et al.** (U.S. Pat. No. 5,416,909).

### ***C. Obviousness-type Double Patenting Rejection?***

In the initial Office Action dated December 16, 2002,<sup>2</sup> claims 1 – 8, 10 – 17, 20 – 25 and 28 – 65 were rejected for obviousness-type double patenting over claim 1 – 9 of the parent case, now U.S. Pat. No. 6,424,335.

In its response to the initial Office Action, applicant offered to submit a terminal disclaimer upon receiving an indication that the application has allowable subject matter, but has not yet done so. This initial response included cancellation of two of the claims that had been subject to the obviousness-type double patenting rejection, but did not otherwise amend the claims.

The second (“final”) Office Action, dated July 29, 2003, was **silent** concerning obviousness-type double patenting. Therefore, in an Amendment filed April 7, 2004, (along with a Request for Continued Examination), in response to the second Office Action, applicant inquired about the status of the obviousness-type double patenting rejection. Applicant’s April 7, 2004, Amendment included numerous changes to many of the claims.

The third Office Action, dated November 16, 2004, again does not include an express rejection based on obviousness-type double patenting. However, in a section labeled **“Response to Arguments”** the examiner states: “For clarification purposes the obviousness-type double

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<sup>2</sup> The December 16 Office Action was originally mailed on October 29, 2002, but was directed to the wrong address and so it was remailed.

patenting rejection still applies to the instant application. The applicant acknowledge [sic] the double patenting rejection by stating that a terminal disclaimer will be submitted...” There was no discussion of the fact that two of the claims had been cancelled and many more amended.

Applicant understands that MPEP §§ 707.07(e) and (g) require the examiner to include every ground of rejection in every Office Action. An *offer* to file a terminal disclaimer did not act to overcome the obviousness type double patenting rejection. In addition, while the examiner’s statement is unclear, applicant’s offer to file a terminal disclaimer cannot be construed as an acquiescence in the rejection. In the words of MPEP § 804.02: “The filing of a terminal disclaimer to obviate a rejection based on nonstatutory double patenting is not an admission of the propriety of the rejection.” If the filing of a terminal disclaimer is not an admission, the offer to file one cannot be an admission. Thus, the status of the obviousness-type double patenting rejection, and the amended claims to which it applies, is uncertain.

## **VII. ARGUMENT**

### **A. Introduction**

This application, which has been pending for close to four years, and which claims priority back to September 1998, is in the field of personal computers – an art that is both very fast moving and that is quite familiar to the general public. Because of the easy familiarity and fast rate of progress in this field, features and devices which were unknown a few years ago are now commonplace and, seemingly, obvious. Therefore, it is especially important to be certain to assess patentability in view of the state of the art as it existed on the priority date. Regrettably, this is a classic case where the examiner has not fairly done so. Instead, she has been determined to reconstruct the claimed invention using hindsight gained over the intervening years by cobbling together bits and pieces from eleven different patents, most of which are for much different types of devices, (one of which was filed two years *after* the priority date of the present application). These eleven patents are then used in eleven different combinations.

In rejecting the claims, the examiner has neglected the fundamental legal principle requiring her to show some suggestion or motivation for making the combinations. Time after time the examiner merely says that one reference teaches “A,” a second teaches “B” and, therefore, the combination of A and B is obvious. In proceeding this way the examiner has clearly ignored the law. Numerous cases condemn the practice of picking and choosing isolated



features from disparate prior art references using hindsight – yet this is precisely what the examiner has done. Worse yet, the examiner has often twisted the teachings of the references beyond recognition. Thus, for example, the examiner asserts that a keyboard is a computer “pointing device” despite the fact that this is inconsistent with dictionary definitions and common usage. It is submitted that application of the correct legal standards and proper construction of the references requires that all of the rejections be reversed.

This Board frequently deals with the question of whether a claimed invention is obvious, and is certainly familiar with the applicable legal standards. In summary, to establish obviousness, an examiner must show more than the presence of the elements of a claim in a collection of prior art references. The examiner must also show some suggestion or motivation for making the combination. *In re Bond*, 15 USPQ2d 1566 (Fed. Cir. 1990); *Carella v. Starlight Archery and Pro Line Co.*, 804 F.2d 135, 140, 231 USPQ 644, 647 (Fed. Cir. 1886); *see also ACS Hosp. Sys., Inc. v. Montefiore Hosp.*, 732 F.2d 1572, 1577, 221 USPQ 929, 933 (Fed. Cir. 1984). In the words of the Federal Circuit in *In re Lee*, 61 USPQ2d 1430, 1433 (2002): “When patentability turns on the question of obviousness, the search for and analysis of the prior art includes evidence relevant to the finding of whether there is a teaching, motivation, or suggestion to select and combine the references relied on as evidence of obviousness.”<sup>3</sup>

#### **B. Rejection 1: Claims 53 and 54**

These claims are directed to a remote wireless input device for a computer which combines a pointing device *and* a non-pointing device, such as a microphone, in a single

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<sup>3</sup> “This precedent has been reinforced in myriad decisions, and cannot be dispensed with. *See, e.g., Brown & Williamson Tobacco Corp. v. Philip Morris Inc.*, 229 F.3d 1120, 1124-25, (Fed. Cir. 2000) (“a showing of a suggestion, teaching, or motivation to combine the prior art references is an ‘essential component of an obviousness holding’”) (quoting *C.R. Bard, Inc. v. M3 Systems, Inc.*, 157 F.3d 1340, 1352, (Fed. Cir. 1998)); *In re Dembiczak*, 175 F.3d 994, 999, (Fed. Cir. 1999) (“Our case law makes clear that the best defense against the subtle but powerful attraction of a hindsight-based obviousness analysis is rigorous application of the requirement for a showing of the teaching or motivation to combine prior art references.”); *In re Dance*, 160 F.3d 1339, 1343, (Fed. Cir. 1998) (there must be some motivation, suggestion, or teaching of the desirability of making the specific combination that was made by the applicant); *In re Fine*, 837 F.2d 1071, 1075, (Fed. Cir. 1988) (“teachings of references can be combined *only* if there is some suggestion or incentive to do so.”) (emphasis in original) (quoting *ACS Hosp. Sys., Inc. v. Montefiore Hosp.*, 732 F.2d 1572, 1577, (Fed. Cir. 1984)).” *Id.*

housing. The addition of a second input device, such as a microphone, may be useful when making presentations. Both claims were rejected under 35 U.S.C. § 102 as being anticipated by Yeom et al., U.S. Pat. No. 5,943,625 (“Yeom”).

The Yeom patent is directed to a computer system which incorporates a separately operated wireless telephone, and describes a wireless telephone handset that can also act as a remote mouse for the computer. In the words of the patent the invention involves: “installing the base unit of a cordless telephone inside the chassis of either a laptop or a personal computer...” (Col. 3, lines 22 – 24.) See also Yeom’s claims 8 and 17 (“a base unit of a cordless telephone located inside said chassis of said computer system”). There is no indication anywhere in the patent that the installed wireless telephone base unit forms any part of the computer – it merely shares a common housing. Thus, FIG. 1 does not show any link between the computer itself and “telephone transmit-receive apparatus” 13, and throughout the patent makes it clear that the telephone transmit-receive apparatus functions independently of the computer. Because the telephone operates independently of the computer, the RF signals transmitted from the telephone handset, comprising analog audio information, is not routed to or processed by the computer. In fact, when making telephone calls, “computer system 104 and the modem *cease to operate*, as they remain in a stand-by state...” (Col. 6, lines 30 – 32, emphasis added.) The RF transmission of audio information from the Yeom telephone is not constitute computer data – it is merely audio information that is sent to a separate “telephone transmit-receive apparatus” which happens to be installed inside the computer housing.

Claim 53 specifies that the non-pointing device is for “generating input information for the computer.” There is nothing Yeom that suggests that when the device is operated as a wireless telephone, the transmitted audio information is used as “input information for the computer” and there is no showing that those of ordinary skill in the art would consider the audio information sent to the telephone base unit as “input information for the computer.” Thus, Yeom does not meet the claim 53 requirement that there be a “non-pointing device . . . for generating input information for the computer” and, therefore, does not anticipate the claim.

### **C. Rejection 2: Claims 1 – 8 and 34 – 41**

These claims were rejected as being obvious over Blankenship et al. (U.S. Pat. No. 5,726,684 – “Blankenship”) in view of Fujioka (U.S. Pat. No. 6,674,424). *Fujioka has a filing*

*date (October 30, 2000) that is more than two years AFTER the priority date of the present application (September 2, 1998) and, therefore, Fujioka is NOT properly applied as a reference.* Since rejection is clearly improper no further discussion of it is required.<sup>4</sup>

#### **D. Rejection 3: Claims 10 – 15 and 42 – 46**

These claims are generally directed to power conserving pointing devices for computers. Independent claim 10 is directed to an input device using an optical encoder comprising photointerrupters and a control circuit which conserves power by operating the optical encoder in a periodic-pulsed mode when the mouse ball is at rest longer than a predetermined period of time, and uses signals from the periodic-pulsed mode to determine when to resume continuous mode operation.

These claims were rejected as obvious over Junod et al., U.S. Pat. No. 5,854,621 (“Junod”) in view of Donovan, U.S. Pat. No. 5,252,968. Junod shows a wireless mouse, having an on-board CPU, designed for reduced power consumption. The mouse has three operational states – normal, standby and sleep. The main difference in these states is the *rate* at which the photodetectors used to sense movement of the mouse ball *are sampled* (see, e.g., Fig. 5 and related text). While the description is vague, Junod’s device appears to use a standard optical encoder having continuously operated LED’s 300, encoder wheels, and photodetectors 310. Movement of the encoder wheel interrupts the light from the LED creating a series of optical pulses at the photodetectors. (See, col. 5, lines 54 – 56 and FIG. 4.) The output of the photodetectors is then sampled, with the sampling rate being adjusted according to use patterns.

Donovan shows a mouse using rapid, short duration pulsing of the optical signal from LED’s to conserve power. Donovan synchronizes light pulses with the on/off state of his photoreceptors, such that whenever a light pulse is emitted from an LED, the corresponding photodetector is “on”. Donovan does not adjust the light pulse rate according to how the mouse is being used and does not address sampling rate.

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<sup>4</sup> The examiner had rejected these claims as being obvious over Blankenship in view of Kim. Since this initial rejection was withdrawn following Applicant’s Office Action response, it is assumed that examiner agrees that the initial rejection was incorrect. In any case, the inapplicability of the Kim patent to the present invention is discussed below in connection with claim 62 (Rejection 8).

The variable sampling rate device of Junod and the pulsed device of Donovan are distinct techniques. It is submitted that the examiner has failed to show a proper rationale for combining these references. The references teach *alternative* ways of reducing power consumption, and there is no showing of a suggestion or motivation to combine.

However, even if the teachings of Junod and Donovan are combined, the combination does not show the claimed invention. Specifically, the claimed invention uses continuous LED illumination when the mouse is in use, and pulsed light to reduce power when the mouse is not being used. There is nothing in either reference which suggests this combination. If someone with a Junod device adopted the teachings of Donovan, the result would be a device which uses the usage-dependent variable sampling of Junod with the uniform light pulsing of Donovan – not a device which sometimes uses pulsed light and other times does not.

*Dependent Claim 11*

This claim requires the use of an infrared transmitter. The primary reference, Junod, is limited to RF devices and expressly teaches *away* from the use of infrared, saying that an infrared mouse is “unworkable” because of range and alignment problems. (Col. 1, lines 41 – 45.) The examiner’s conclusory statement, that it would be obvious to use infrared in Junod’s device flies in the face of this teaching.

*Dependent Claims 12 and 43*

Both of these dependent claims recite the additional element of a power range switch. Neither Junod nor Donovan make any suggestion of a power range switch. In the most recent Office Action, the examiner relies Junod’s teaching of a mouse that can operate in three sampling modes (normal, standby and sleep) as making the range switch recited in claims 12 and 43 obvious.<sup>5</sup> Applicant simply does not comprehend the relationship between variable sampling rate and a range switch. Junod’s power modes are not user selectable and have nothing to do with a “range switch.” Instead they are related to mouse usage patterns, such that when the mouse is not used for a short period of time (*e.g.*, 20 milliseconds) it first enters the “standby”

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<sup>5</sup> Previously, in rejecting these claims the examiner referred to a passage in Junod which discloses a plurality of user selectable *transmission channels* for selecting the *frequency* of the mouse signal, so as to avoid interference if multiple devices are in operation in the same vicinity. There is nothing in Junod which suggests that there is any difference in the power levels of the different transmission channels. Thus the

state and then, if the non-use continues (e.g., 10 seconds), it enters the “sleep” state. (See, e.g., col. 6, lines 37 – 65.)

Automatically controlling the sampling rate depending on whether the mouse is being used at all, as described in Junod, is considerably different than the claimed **range switch** of the present invention which controls the transmission power of the remote device, not the internal power usage. The range switch gives the mouse of the present invention added functionality for presentation use. The range switch addresses the fact that the mouse needs to have sufficient power to act at a considerable distance from the computer, as when it is being used to deliver a presentation, but that this higher power level is not required when the computer is being used in a more routine manner, such that the mouse is close to the computer.

#### *Dependent Claims 15 and 46*

These claims require the incorporation of a laser pointer on the remote device. The examiner’s entire explanation for the rejection of Claims 15 and 46 reads as follows:

“With reference to claims 15 and 46, neither Junod et al. nor Donovan teach the usage of a laser pointer contained within the input device is well known in the art. Therefore it would have been obvious to one having ordinary skill in the art at the time of the invention to use IR transmission as opposed to RIF [sic] transmission in a wireless input device to thereby transmit information for cursor control.” (Nov. 16, 2004, Office Action, page 8.)

Applicant respectfully submits that this makes no sense. Apparently, the examiner concedes that neither of the references she relies on teach a laser pointer. It is not clear why a discussion of IR vs. RF transmission is relevant to the inclusion of a laser pointer. A laser pointer is a well known type of device that generates an intense beam of visible light that is used to point at objects, such as slides in a presentation, and is unrelated to IR or RF transmission of positional information.

#### **E. Rejection 4: Claims 16, 17 and 20**

Independent claim 16 is directed to an ergonomic infrared input device that can be operated in two different hand and finger positions, having the following salient features: (1) a housing with substantially planar top and bottom surfaces and a mouse button on the top surface,

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availability of different transmission channels is entirely different than providing a user-selectable power range switch.

(2) a first pointing device comprising a mouse ball coupled to an optical encoder using photointerrupters disposed on the bottom surface, (3) a second pointing device disposed on the top surface, (4) an infrared transmitter, and (5) a housing configuration that allows the device to be operated as a mouse with index and middle fingers of the hand on the top surface or held in the user's palm such that the second pointing device can be operated by the user's thumb.

These claims were rejected over Blankenship et al., U.S. Pat. No. 5,726,684 (“Blankenship”) in view of Cheng, U.S. Pat. No. 5,457,479, and Heng-Chuen, U.S. Pat. No. 5,914,703. Blankenship shows a notebook computer with a removable pointing device that can be operated as a “trackball” when it is nested in the computer housing, or that can be operated as a mouse when removed from the housing and turned upside down. There is no teaching or suggestion of incorporating multiple pointing devices on opposing surfaces of the device’s housing, nor is there any teaching or suggestion concerning the claimed ergonomic features of the present invention. For example, there is no reason to operate Blankenship remotely in two different handheld positions.

Cheng shows a dual-mode pointing device with a ball that protrudes from both the upper and lower surfaces of a housing, such that the device can be used either as a trackball, by rotating the ball from above, or as a mouse, by moving the ball on a surface in traditional mouse fashion. Cheng uses a protective cover to avoid movement of the ball from below when it is being operated as a trackball. Cheng does not disclose a wireless pointing device, nor does it appear that the device is intended to be held in the user’s hand. Rather, Cheng’s device appears to be tethered to the computer by wire and to operate as a traditional desktop trackball device, such that the device rests on a flat surface in both modes. There is no teaching of holding the device remotely in two different positions.

Cheng and Blankenship disclose two different alternatives for accomplishing the same thing – namely, they each rely on a single ball to act both as a mouse ball and as a trackball. Blankenship does this by flipping the device over and Cheng does this by having the ball protrude from both surfaces. Since both devices accomplish the same result, there is no reason to modify Blankenship in view of the teachings of Cheng.

Heng-Chuen, although showing a pointing device, relates to an much different device configured in a much different way. The pointing device of Heng-Chuen is not a mouse and there is no motivation shown to modify the Heng-Chuen device to include a mouse. Heng-

Chuen does not disclose a wireless input device. Herng-Chuen's two pointing devices are NOT designed to be used as alternatives, but rather are complementary devices that are intended to be operated together. Each "pointing device" is used to control *different* positional movement. Thus, the devices are intended to be used simultaneously: one device may be used to move a cursor in an x-y plane while the second is used to move the cursor in a y-z plane. (See, *e.g.*, col. 2, lines 47 – 67.) As such, it would be more accurate to consider Herng-Chuen's device as a single pointing device.

Herng-Chuen does not show two different pointing devices on the top and bottom surface – rather the "second" pointing device is on one or more side surfaces of the device, and there is no embodiment shown or suggested in which a second pointing device is disposed on the bottom surface. Disposing the two pointing devices on the top and bottom surfaces would make them difficult to use simultaneously. Since Herng-Chuen's pointing devices are intended to be used simultaneously, there is no reason why the input device would be used in two different handheld positions. The examiner admits that Herng-Chuen does not teach holding the device remotely in two different positions, but says: "it is taught that the input device is small enough for the user to be able to use different hand arrangements to operate pointing devices on the input device (see column 4)." (OA page 9.) Applicant respectfully points out that there is no disclosure in column 4 of Herng-Chuen (or anywhere else in the patent) which describes use of a device with "different hand arrangements." At most, the patent discloses that different device embodiments (*i.e.*, devices having different physical layouts) may be used differently.

The examiner has not shown any suggestion or motivation for combining the teachings of these three patents. The examiner's conclusion that the references render the claimed subject matter obvious is purely conclusory, and appears to be based on a misreading of the references.

#### **F. Rejection 5: Claims 21 – 23**

These claims are all dependent on claim 16, which is described above in connection with Rejection 4. These claims specify particular types of pointing devices (claims 21 – 22) or that the device includes a laser pointer (claim 23). The rejection is the same as above (*i.e.*, Blankenship, Cheng and Herng-Chuen) with the addition of Wang, U.S. Pat. No. 5,771,038. Wang discloses a traditional "wired" mouse, with a supplemental device mounted thereon for providing additional control of the display. Like the device described in Herng-Chuen, Wang's

supplemental device is used to provide additional functionality beyond the x-y cursor control provided by the mouse. Rather than providing two alternative pointing devices, Wang provides a first traditional pointing device and a second complementary device that is designed to be used in concert with the first pointing device. Thus, the patent teaches and claims the use of a supplemental device for z-axis movement of the cursor, for rotation of the displayed image, or for adjusting the display properties, such as the color intensity. (See, *e.g.*, col. 4, lines 35 – 57.) Again, this arrangement should more accurately be considered as a single pointing device. There is no suggestion that the second device replicates the function of the mouse. In most of the embodiments the supplemental device, which can take various forms, is mounted on the side of the mouse.

The examiner has failed to show any suggestion or motivation for combining Wang with the three other references relied upon to achieve the inventions of claims 21 – 23. Herng-Chuen expressly teaches away from the use of joystick type devices. (See, *e.g.*, col. 1, lines 14 – 19 and col. 5, lines 35 – 40.)

#### *Dependent Claim 23*

None of the references applied show a laser pointer, as recited in claim 23, and the Office Action makes no mention of a laser pointer. In the computer art, a laser pointer is not a “pointing device,” yet without any discussion the examiner treats claim 23 as though it recited another, different type of computer pointing device.

#### **G. Rejection 6: Claims 47, 48, 61 and 65**

These claims are similar to the claims described in connection with Rejection 4, and also relate to multi-input remote devices. Independent claims 47, 61 and 65 are broader, in certain respects, than claim 16. Claim 47 is directed to an input device and claims 61 and 65 are directed to computer systems. Independent claim 47 recites an ergonomic input device having a first pointing device disposed on the bottom portion of a housing, and a second pointing device on the top portion, and a transmitter. The housing is configured to be gripped in two different hand positions depending on how the device is to be used. Independent claim 61 also recites an input device having two pointers disposed on its top and bottom surfaces, respectively, and adds the requirement that the notebook computer has a recess for receiving the input device. Independent claim 65 is similar to claim 61, but requires only a single pointing device on the



remote unit.

These claims were rejected as obvious over Heng-Chuen in view of Cheng. These patents were discussed above in the context of the similar claims covered by Rejection 4, and that discussion will not be repeated. Neither reference teaches or suggests any sort of transmitter, (as recited in claims 47, 61 and 65), nor does either disclose or suggest an input device intended to be held in two different hand positions (as recited in claim 47), nor does either disclose a notebook computer with a recess for receiving the input device (as recited in claims 61 and 65). On this last point, it appears that the examiner has misinterpreted the Heng-Chuen patent as teaching a removable, wireless pointing device. This is not the case. Heng-Chuen teaches a device that either “can be easily integrated into portable computers,” as shown in FIG. 1 of the patent, “or built as a small peripheral device which can be easily carried with other equipment,” as shown in FIGS. 3, 5 and 6. (See, col. 5, lines 37 – 39.) Nowhere does it teach or suggest a pointing device that can be removably inserted into a recess in the computer base or that it is wireless.

#### **H. Rejection 7: Claims 49 – 52**

These claims are all dependent on claim 47, which is discussed above, specifying particular types of pointing devices (claims 49 – 51) or that the device further comprises a laser pointer (claim 52). (Other than their base claims, these dependent claims are the same as claims 20 – 23.)

These claims were rejected over Heng-Chuen in view of Cheng and further in view of Wang. Each of these references are discussed above in connections with Rejections 4, 5 and 6. It is believed that no further argument is necessary.

#### **I. Rejection 8: Claim 62**

This claim is dependent on claim 61, which is discussed above in connection with Rejection 6. Claim 62 adds the requirement that the computer base have a receiver that is mounted on the computer’s display section. Locating a receiver on the display frame is useful for wide angle reception at a distance, such as when the remote pointing device is used in a presentation. To the extent that the prior art included receivers for remote pointing devices, such receivers were located in the base unit, closer to where the mouse is likely to be used when

operating the computer in a typical manner.

Claim 62 was rejected on the same grounds as claim 61, further in view of Kim et al. U.S. Pat. No. 5,952,996 (“Kim”), which is said to teach the use of receivers on the display frame of a computer. Kim teaches the use of a plurality of receivers on a computer display in a system that is designed *to determine the spot on the screen at which the device is aimed*. The Kim et al. device is for narrow applications, such as video games, wherein it is desired to know where the output of a device is *aimed* so as to enable a user to *point at screen objects*. In contrast, the mouse and trackball devices of the other references do not rely on physically aiming the device output at a specific screen location. All the other prior art devices identified use the rotation of a ball or similar mechanism to move a cursor or other pointer on a screen without regard to the aiming or specific orientation of the device. The Kim device lacks a ball or other equivalent mechanism because it is superfluous to their device.

In order to operate effectively the Kim device creates a relatively narrow beam because it relies on the small differences in beam intensity detected at the various receptors to calculate the position the beam is aimed at. A plurality of receptors are used around the periphery of the screen for the sole purpose of enabling calculation of the aim of the device. Since the aim of the mouse is superfluous to the devices disclosed in the other references, there would be no reason to employ the sensors used in Kim. Rather, the sensor would be kept on the base of the computer close to where the device is typically used.

The examiner’s conclusory assertion that “it would obvious to one having ordinary skill in the art at the time of the invention to include receivers on the display section *to thereby give the user a larger area to operate the input device*” is without any support. Kim is completely unconcerned with the problem of giving users a larger area to operate. Their device uses multiple sensors on the display for an entirely different purpose, a purpose which has no relation to the teachings of any of the other prior art of record. This is a classic instance of the examiner taking a teaching from the *present application* – namely that positioning a sensor on the frame of a notebook computer’s display section is useful to achieve wide area coverage – and then using that teaching to reconstruct the invention from unrelated prior art references. Clearly it is improper for the examiner to use the teachings of the present invention to show motivation for her combination. When the teachings of the present application are removed from consideration,

there is no motivation to combine the aim sensing system of Kim with the pointing devices of Heng-Chuen or Cheng, neither of which even teaches a wireless device.

**J. Rejection 9: Claims 24 and 25**

These claims are directed to a multi-input ergonomic infrared remote input unit having both a mouse and a second data input device. The input device has a control circuit and a mode control switch.

These claims were rejected as being obvious over Yeom in view of Blankenship. As described in greater detail above in connection with Rejection 1, Yeom teaches a combination of a mouse and cordless telephone which operates through a separate telephone transceiver located in a computer housing. The telephone transceiver operates independently of the computer. The teachings of Yeom are limited to a telephone which operates using a radio frequency transmitter. In one embodiment an RF transmitter is used for the telephone and an infrared transmitter is used for the mouse, but this is not preferred because infrared is limited to line of sight transmission. (See generally, col. 5, lines 20 – 41.) It is submitted that it would not have been obvious to modify Yeom such that both the mouse and telephone would rely on infrared transmission as required by the claims; nor is a telephone a “data input device” as discussed above. No motivation has been shown to combine Yeom with Blankenship. Further, there is nothing which suggests using a microphone as a data input device, as in claim 25. While the telephone of Yeom has a microphone, it is not a data input device as it operates independently of the computer.

**K. Rejection 10: Claims 28 and 55**

These claims, which are dependent on independent claims 24 and 53, respectively, add the requirement that the data input device is a joystick. It is understood that the rejection relies on the same rejections of the respective base claims, with the addition of Klein, et al., U.S. Pat. No. 6,163,326, (“Klein”). Thus, claim 28 is rejected over Yeom, Blankenship and Klein, while claim 55 is rejected over Yeom and Klein.

There is nothing in either any of the references which suggests the substitution of a joystick (in Klein) for the telephone of Yeom so that it can be used a second data input device. Again, the examiner merely has shown that various pieces of the invention are found in various pieces of prior art, but has failed to show any suggestion or motivation for combining them.

#### L. Rejection 11: Claims 29 – 33 and 56 – 60

These claims are directed to a computer system comprising a remote pointing device which nests in the computer base, a second pointing device on the computer base, and a signal arbitration circuit which determines how inputs from the two pointing devices are used to control the pointer position. Independent claims 29 and 56 differ primarily in that the former specifies that the remote pointing device is an infrared device, while the latter more broadly claims that it is wireless. Dependent claims 30 and 57 specify that the computer has a port for receiving the output of a third pointing device, and that the signal arbitration circuit also mediates this output. The remaining dependent claims recite additional features of the arbitration circuit.

These claims were rejected as obvious over Oka, U.S. Pat. No. 5,049,863, in view of Long et al., U.S. Pat. No. 5,416,909, (“Long”). Neither reference shows or suggests a computer with two *pointing* devices as is claimed. The examiner has effectively ignored the requirement of these claims that there be a second “pointing device.”

Making up her own definition, the examiner asserts that the keyboard’s keys constitute a “pointing device” as used in the claims. This is error. The examiner is obliged to construe claim terminology in accordance with its ordinary meaning, absent some special meaning assigned in the patent application.<sup>6</sup>

A typical definition of “Pointing device” follows (from the internet site, Wikipedia):

“A pointing device is any hardware component that allows a user to input spatial data to a computer. CAD systems and Graphical User Interfaces (GUI) allow the user to control and provide data to the computer using physical ‘gestures’ - point, click, and drag - typically by moving a hand-held mouse across the surface of the physical desktop and activating switches on the mouse. Movements of the pointing device are echoed on the screen by movements of the mouse pointer and other visual changes.

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<sup>6</sup> As stated in *In re American Academy of Science Tech Center*, 70 USPQ2d 1827, 1830 (Fed. Cir. 2004): “During examination, ‘claims ... are to be given their broadest reasonable interpretation consistent with the specification, and ... claim language should be read in light of the specification **as it would be interpreted by one of ordinary skill in the art.**’ *In re Bond*, 910 F.2d 831, 833 (Fed. Cir. 1990); *accord Bass*, 314 F.3d at 577 ...; *In re Cortright*, 165 F.3d 1353, 1358 (Fed. Cir. 1999) (‘Although the PTO must give claims their broadest reasonable interpretation, **this interpretation must be consistent with the one that those skilled in the art would reach.**’); *Hyatt*, 211 F.3d at 1372.” (Emphasis added.)

“While the most common pointing device by far is the mouse, other kinds include trackball, touchpad, pointing stick, lightpen, various kinds of digitizing tablets which use a stylus, and even a special “data glove” that translates the user’s movements to computer gestures.”

Another definition, (from the American Heritage® Dictionary of the English Language, Fourth Edition):

**“pointing device** (poin’ting)

*“n. Computer Science*

*“An input device, such as a mouse, joystick, or trackball, with which one can move or manipulate a cursor or pointer on a GUI.”*

Conspicuously absent from these definitions is any reference to a keyboard. Simply put, those of ordinary skill in the art do not consider computer keyboards to be “pointing devices” even though certain keys can be used, depending on the application program running at the time, to move a cursor. The Oka patent itself does not suggest that a keyboard is a pointing device: “keyboard 11 ... has a plurality of *data input keys* 11a and *function keys* 11b.” (Col. 2, lines 26 – 28.)

The examiner is not free to ignore the ordinary meaning of a term and apply her own definition which equates a “pointing device” with a key that can cause cursor movement. Consistent with the above definitions and the common usage, the present application uses the term “pointing device” in a way which is exclusive of a computer keyboard. The examiner is bound to use the accepted meaning of pointing device, and using that meaning, it is clear that Oka does not have two pointing devices as claimed.

Further, the arbitration circuit of Long does not arbitrate signals from two (or three) pointing devices, it simply handles arbitration of signals from a variety of different I/O devices. The entire discussion in the patent describes a circuit that is used to provide a controller that can handle signals from both a mouse and a keyboard. Primarily this involves deferring processing of a second I/O input until processing of a first I/O input has been completed. While the Long patent refers to “locking out” the input from a device, it is clear that this has a much different meaning than as used in the present application. Long’s “locking out” simply involves deferring processing for a few clock cycles – too short a time to even be noticeable to the user. Long’s circuit does not have to handle and determine how to process inputs from multiple devices of the

same type. Indeed, there is no discussion of the problem of mediating between data from multiple devices of the same type. Thus, it is respectfully submitted that even if these references are combined they do not teach what is claimed.

*Dependent Claims 30 – 32 and 57*

As to claims 30 – 32 and 57, the examiner asserts that Oka's mouse is actually *two* pointing devices. Again, there is no such teaching in the Oka patent. Rather the patent says that the device can be used as a cursor control pad *when it is nested in recess 15 or as a mouse when it is removed from the recess*. When unit 16 is removed and functions as a mouse “two of the cursor keys 17 ... are used as mouse buttons” instead. (Col. 2, lines 64 – 67.) Thus, even if cursor movement keys 17 are somehow considered to be a pointing device (and it is submitted that those skilled in the art clearly would not consider them as such for the reasons discussed above), the cursor movement function is **disabled** when the key input unit 16 is removed from the recess. Thus, Oka does not teach the use of three pointing devices. In reality it teaches only one.

*Dependent Claims 31, 32, 58 and 59*

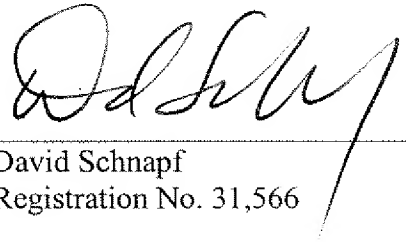
Because Long's circuit does not mediate between devices of the same type, the reference does not teach or suggest any of these dependent claims. Thus, Long does not teach any user selectability as recited in claims 31, 32, 58 and 59. As noted, Long's teaching of locking out a device is really only deferred processing of the device input for an imperceptible period of time. There is no suggestion that the user can specify that one or another of the same type of device will be given priority. As to claims 32 and 59, Long does not teach or suggest that one type of device is “always enabled” and that another is locked out.

## VII. CONCLUSION

For the foregoing reasons, Applicant respectfully requests that the rejection of all of the pending claims of the application be reversed.

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Respectfully submitted,



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## **APPENDIX OF THE CLAIMS INVOLVED IN THE APPEAL**

1. A notebook computer capable of receiving infrared signals from an infrared input device, comprising:

a computer base;

a display section, comprising a display screen surrounded by a frame, said display section coupled to said computer base by one or more hinges; and

an infrared sensor attached to said notebook computer; wherein said infrared sensor is disposed on the frame of said display section so that a wide angle infrared detection response is achieved.

2. The notebook computer of claim 1, wherein said infrared sensor is disposed on an upper portion of said frame of said display section.

3. The notebook computer of claim 1, further comprising at least one additional infrared sensor disposed on said notebook computer.

4. A notebook computer adapted to receive infrared signals from an infrared input device, comprising:

a computer base;

a display section, comprising a display screen surrounded by a frame, said display section coupled to said computer base by one or more hinges;

at least two infrared sensors; and

a signal combining element to combine the output signals from said sensors;

wherein said infrared sensors are disposed so that a wide angle infrared detection response is achieved.

5. The notebook computer of claim 4, wherein at least one of said infrared sensors is disposed on the display frame of said display section.



6. The notebook computer of claim 4, wherein at least one of said sensors is an external elevated sensor coupled to said computer base section.

7. The notebook computer of claim 4, wherein two of said infrared sensors are disposed on the frame of said display section.

8. The notebook computer of claim 7, wherein said infrared sensors are disposed proximate to the hinge region of said display frame.

10. An input device for a computer, comprising:  
a housing;  
a rotatable ball coupled to said housing;  
an optical encoder comprising photo-interruptors disposed in said housing, said optical encoder providing output signals in response to rotation of said ball; and  
a control circuit, said control circuit receiving as inputs said output signals of said optical encoder, said control circuit also capable of controlling the power to said photo-interruptors of said optical encoder;  
wherein said control circuit conserves power by operating said optical encoder in a periodic-pulsed mode when said ball is at rest longer than a preselected time interval and said control circuit utilizes said signals of said encoder in said periodic-pulsed mode to determine when to resume a continuous position sensing encoder mode.

11. The input device of claim 10, further comprising an infrared transmitter to transmit data corresponding to the output signals of said optical encoder.

12. The input device of claim 11, further comprising a range switch, said range switch comprising at least two infrared transmitter power settings.

13. The input device of claim 11 wherein the infrared transmitter transmits the data as bytes with a start bit; and wherein no infrared data are transmitted when said ball is in said power conservation state.

14. The input device of claim 13, further comprising a user settable identification code.
15. The input device of claim 11, further comprising a laser pointer.
16. A compact ergonomic infrared input device designed to be operated in two different hand and finger positions, comprising:
- a housing, said housing having a substantially planar bottom surface, a substantially planar top surface, flared sides, and a first end and a second end;
  - at least one mouse button coupled to said top surface of said housing proximate to said first end;
  - a first pointing device comprising a mouse ball coupled to said bottom surface of said housing; and
  - an optical encoder coupled to said mouse ball, said optical encoder comprising photo-interruptors to measure the motion of said mouse ball;
  - a second pointing device disposed on the top surface of said housing; and
  - an infrared transmitter to transmit positional information from said first and said second pointing devices;
- wherein said housing is dimensioned so that said input device may be operated as a mouse with the index and middle fingers of the hand on the top surface of said housing and with a portion of the thumb along the edge of said housing; and
- wherein said housing is further dimensioned so that said input device may be held along its bottom surface in the palm of a user's hand such that the second pointing device on said top portion may be operated by the thumb.
17. The input device of claim 16, wherein said second pointing device is a touchpad.
20. The input device of claim 16, wherein said second pointing device is a trackball.
21. The input device of claim 16, wherein said second pointing device is an ergo track input device.

22. The input device of claim 16, wherein said second pointing device is an eraser-head type input device.

23. The input device of claim 16, further comprising a laser pointer.

24. A multi-input infrared input unit, comprising:

a housing, said housing having a substantially planar bottom surface, a substantially planar top surface, flared sides, and a first end and a second end;

at least one mouse button coupled to said top surface of said housing proximate to said first end;

a mouse ball coupled to said bottom surface of said housing;

an optical encoder coupled to said mouse ball, said optical encoder comprising photo-interruptors responsive to motion of said mouse ball;

a data input device to receive non-pointer related information; and

an infrared transmitter to transmit digital data;

a control circuit coupled to said optical encoder and said data input device; and

a mode control switch coupled to said control circuit, said mode control switch acting to select between a mouse mode and at least one other data input mode;

wherein said control circuit acts in said mouse mode to transmit infrared data corresponding to positional information from said optical encoder and said control circuit acts in said data input mode to transmit infrared data corresponding to information received by said data input device.

25. The multi-input infrared input unit of claim 24, wherein said data input device is a microphone.

28. The multi-input infrared input unit of claim 24, wherein said data input device is a joystick.

29. A notebook computer system, comprising:

an infrared input device having a first pointing device, said infrared input device comprising an infrared transmitter for transmitting positional control information as infrared signals;

a notebook computer comprising a computer base, said computer base comprising a second pointing device and a display screen surrounded by a frame;

an infrared receiver coupled to said notebook computer to receive positional control information from said infrared input device; and

a signal arbitration circuit to determine how inputs from said first pointing device and said second pointing device are used to control pointer position;

wherein said infrared input device is dimensioned to removably fit into said computer base.

30. The notebook computer system of claim 29, comprising an external port for receiving the output of a third pointing device and wherein said signal arbitration circuit determines how inputs from said first, second and third pointing devices are used.

31. The notebook computer system of claim 30, wherein an arbitration criteria of said signal arbitration circuit is user selectable as to which of said first, second and third pointing devices have priority or are locked-out.

32. The notebook computer system of claim 31, wherein said second pointing device is always enabled and said arbitration criteria may be selected to lock-out said inputs from said infrared input device.

33. The notebook computer system of claim 29, wherein said notebook computer arbitration circuit responds to control inputs from both said second pointing device and said infrared input device such that both pointing devices may be used at the same time.

34. A portable computer capable of receiving signals from a first detached input device by wireless transmission, comprising:

a computer base containing a second input device;

a display section, said display section comprising a display, said display section attached to said computer base; and

at least one receiver disposed on said display section, for receiving signals from said first detached input device by wireless transmission; wherein said at least one receiver is disposed so that a wide angle wireless detection response is achieved.

35. The portable computer of claim 34, comprising a hinge, wherein said hinge is attached to a lower portion of said display section, coupling said display section to said computer base, wherein said at least one receiver is disposed on an upper portion of said display section.

36. The portable computer of claim 34, comprising at least two receivers.

37. The portable computer of claim 34, wherein said display section is coupled to said computer base by a hinge and said receiver is disposed proximate to said hinge.

38. A portable computer adapted to receive wireless signals from a first pointing device, comprising:

a computer base comprising a second pointing device;

a display screen surrounded by a display frame attached to said computer base section;

and

at least two receivers for receiving wireless signals from said first pointing device.

39. The portable computer of claim 38, wherein at least one of said receivers is disposed on said display frame.

40. The portable computer of claim 38, wherein two receivers are disposed in said display frame.

41. The portable computer of claim 40, wherein said display section is coupled to said computer base section by one or more hinges and each of said sensors is disposed proximate to a hinge.

42. The input device of claim 10, further comprising a wireless transmitter for transmitting data corresponding to the output of said optical encoder.

43. The input device of claim 42, further comprising a range switch comprising at least two power settings for controlling the output power of said wireless transmitter.

44. The input device of claim 42, wherein said wireless transmitter transmits the data as bytes with a start bit; and wherein no data are transmitted when said ball is in said power conservation state.

45. The input device of claim 44, further comprising a user settable identification code.

46. The input device of claim 44, further comprising a laser pointer.

47. An input device comprising:  
a housing having top and bottom portions;  
a first pointing device, disposed on said bottom portion of said housing;  
a second pointing device, disposed on said top portion of said housing  
a transmitter to transmit information from said first and said second pointing devices;  
wherein said housing is dimensioned so that said input device may be gripped by a user's hand and operated as a mouse by movement of the device on a surface; and  
wherein said housing is further dimensioned so that said input device may be held along its bottom portion in the palm of a user's hand such that the second pointing device on said top portion may be operated by a thumb.

48. The input device of claim 47, wherein said second pointing device is a touchpad.

49. The input device of claim 47, wherein said second pointing device is a trackball.

50. The input device of claim 47, wherein said second pointing device is an ergo track input device.

51. The input device of claim 47, wherein said second pointing device is an eraser-head type input device.

52. The input device of claim 47, comprising a laser pointer.

53. A wireless input device for transmitting data to a computer, comprising:  
a housing,  
a pointing device for generating positional information, mounted on said housing;  
a non-pointing device mounted on said housing, for generating input information for the computer;  
a transmitter for transmitting data from said pointing and non-pointing devices; and  
a selector for choosing between operating said input device as said pointing device or as said non-pointing device.

54. The input device of claim 53, wherein said non-pointing device is a sound input means.

55. The input device of claim 53, wherein said non-pointing device is a joystick.

56. A computer system, comprising:  
a remotely operable wireless input device having a first pointing device which transmits positional information;  
a portable computer comprising a computer base, a second pointing device mounted on said computer base, a display and a receiver which receives said positional information from said input device; and  
a signal arbitration circuit to determine how inputs from said first pointing device and said second pointing device are used to control pointer position;  
wherein said input device is dimensioned to removably fit into said computer base.

57. The computer system of claim 56, comprising an external port for connecting a third pointing device, wherein said signal arbitration circuit determines how inputs from said first, second and third pointing devices are used.

58. The computer system of claim 57, wherein an arbitration criteria of said signal arbitration circuit is user selectable as to which of said first, second and third pointing devices have priority or are locked-out.

59. The computer system of claim 58, wherein said second pointing device is always enabled and said arbitration criteria may be selected to lock-out inputs from said input device.

60. The computer system of claim 56, wherein said computer may be programmed to simultaneously respond to inputs from both said second pointing device and said input device.

61. A computer system, comprising:  
a first input device having a housing having a top and a bottom; a first pointing device, disposed on said bottom of said housing; a second pointing device, disposed on said top of said housing, and a transmitter to transmit information from said first and second pointing devices;  
and

a portable computer having a computer base with a second input device mounted on said computer base, a display section connected to said computer base and a receiver for receiving said information by wireless transmission;

wherein said computer base of said portable computer has a recess for receiving said first input device, wherein said recess is mounted in front of said second input device.

62. The computer system of said claim 61, wherein said receiver is mounted on said display section.

65. A computer system, comprising:



a first input device comprising a housing, a pointing device and a transmitter to transmit information from said pointing device; and

a portable computer having a computer base with a second input device mounted on said computer base, a display connected to said computer base and a receiver for receiving said information by wireless transmission;

wherein said computer base of said portable computer has a recess for receiving said first input device, wherein said recess is mounted in front of said second input device.

#### **APPENDIX OF EVIDENCE**

“Declaration of Ashok Vasudeo Under 37 C.F.R. § 1.131” dated April 2, 2004, submitted April 6, 2004, entered and considered by the Examiner as reflected in Office Action mailed November 16, 2004 (see page 16 and the Interview Summary in that Action).

#### **APPENDIX OF RELATED PROCEEDINGS**

None.